Facility Study Agreement (FSA) Units

June 15, 2018
Status Quo for Modelling FSA Units

• Status Quo:
  – Consider all FSAs & suspended ISAs at time of case build.
  – If FSAs or suspended ISAs are excluded from the Base Case at time of case build, TEAC should be notified.

• Issues with Status Quo
  – Generation mismatch between Market Efficiency Base Case and Reliability Case
  – Some FSA-related network upgrades may not be available at the time of case build
  – Most FSA units are never built

• FSA example on the next slide
It was identified that a significant portion of the SUSQ-HARW simulated congestion was caused by the generator Sunbury #2 (Queue: AA2-182, FSA status).

At the time of mid-cycle update, the reliability study for Sunbury #2 was in-progress and specific network upgrades were not finalized and available to be included in the base case.

Congestion, therefore benefits, decreased significantly when the specific network upgrades were added to the base case.
PJM Proposal for FSA Units

• PJM Proposal:
  – By default, exclude from the Base Case the FSAs & suspended ISAs at time of case build.
  – In case of a reserve deficiency, resources with an FSA or a suspended ISA will be ranked by commercial probability, and PJM will include the resources with the highest rankings, as well as the expected network upgrades, in the market efficiency base case, until the reserve requirement is met.
• Over 85% of queued generation requests ultimately withdraws from the interconnection process and does not reach commercial operation.

• Commercial probability model is based on historical data for projects that have either achieved in-service status or have withdrawn from PJM’s interconnection queue.

• The model is used to calculate commercial probabilities for those projects that have not yet achieved resolution (active, under construction, or suspended).

• Commercial probabilities derived with logistic regression models are currently used in PJM’s Installed Reserve Margin (IRM) Study.
Variables used in Commercial Probability Calculation

• Commercial probability estimates address the following factors:
  – **Queue Stage:** Feasibility, Impact, Facilities, ISA/WMPA
  – **Fuel Type:** Natural Gas, Coal, Nuclear, Biomass, Hydro, Methane, Oil, Solar, and Wind.
  – **Location/State:** NJ, PA, VA, MD, OH, DE, IL, IN, NC, and WV. Other states that are not significantly represented in the Interconnection Queue’s historical data were grouped in the category ‘Other.’
  – **Size:** MW of energy to be supplied by the interconnection queue if it reaches commercial operation.
  – **Type of Project:** new unit or uprate to an existing unit.
### Unit # | Status | MW Energy | MW Capacity | Fuel | State | New/ Uprate | Probability
--- | --- | --- | --- | --- | --- | --- | ---
1 | FSA | 10 | 10 | Coal | WV | Uprate | 91.6%
2 | FSA | 50 | 50 | Natural Gas | VA | Uprate | 90.8%
3 | FSA | 34 | 34 | Hydro | VA | Uprate | 90.7%
4 | FSA | 74 | 74 | Natural Gas | NJ | Uprate | 85.5%
5 | FSA | 30 | 30 | Natural Gas | PA | Uprate | 73.0%
6 | FSA | 50 | 100 | Natural Gas | PA | Uprate | 72.8%
7 | FSA | 5 | 5 | Nuclear | PA | Uprate | 58.2%
8 | FSA | 5 | 5 | Nuclear | PA | Uprate | 58.2%
9 | FSA | 0 | 3 | Solar | OA | Uprate | 54.0%
10 | FSA | 16.3 | 5.8 | Wind | WV | Uprate | 51.3%
11 | FSA | 200 | 26 | Wind | IN | New | 50.9%
12 | FSA | 15 | 5.7 | Solar | VA | New | 40.6%
13 | FSA | 15.6 | 10.4 | Solar | VA | New | 39.1%
14 | FSA | 19.9 | 1.9 | Other | OH | New | 32.9%
15 | FSA | 2.3 | 0.87 | Solar | NJ | New | 30.4%
16 | FSA | 2.6 | 0.99 | Solar | NJ | New | 30.4%
17 | FSA | 1140 | 1040 | Natural Gas | PA | New | 28.2%
18 | FSA | 18 | 12.4 | Solar | PA | New | 14.4%
19 | FSA | 80 | 56 | Solar | NC | New | 6.3%
20 | FSA | 451 | 451 | Natural Gas | DE | New | 5.6%
21 | FSA | 120 | 84 | Solar | NC | New | 1.1%
22 | FSA | 1500 | 195 | Wind | IN | New | 0.1%
23 | FSA | 130 | 16.9 | Wind | NC | New | 0.0%